



**TIP132
TIP135 TIP137**

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- STMicroelectronics PREFERRED SALES TYPES

APPLICATION

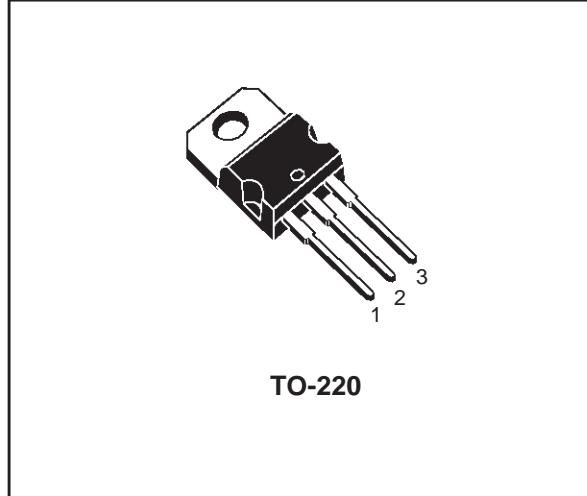
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

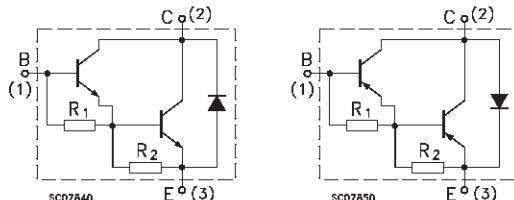
The TIP132 is a silicon Epitaxial-Base NPN power transistor in monolithic Darlington configuration, mounted in Jedec TO-220 plastic package. It is intended for use in power linear and switching applications.

The complementary PNP type is TIP137.

Also TIP135 is a PNP type.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		NPN	PNP	
V _{CBO}	Collector-Base Voltage ($I_E = 0$)	60	100	V
V _{CEO}	Collector-Emitter Voltage ($I_B = 0$)	60	100	V
V _{EBO}	Emitter-Base Voltage ($I_C = 0$)	5		V
I _C	Collector Current	8		A
I _{CM}	Collector Peak Current	12		A
I _B	Base Current	0.3		A
P _{tot}	Total Dissipation at $T_{case} \leq 25^\circ\text{C}$ $T_{amb} \leq 25^\circ\text{C}$	70	2	W
T _{stg}	Storage Temperature	-65 to 150		°C
T _j	Max. Operating Junction Temperature	150		°C

* For PNP types voltage and current values are negative.

TIP132 / TIP135 / TIP137

THERMAL DATA

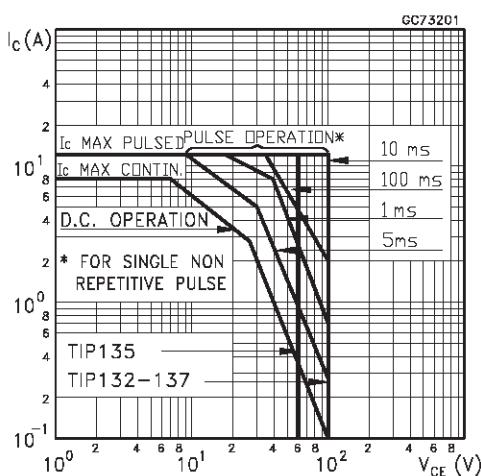
R _{thj-case}	Thermal Resistance Junction-case	Max	1.78	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	63.5	°C/W

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^\circ\text{C}$ unless otherwise specified)

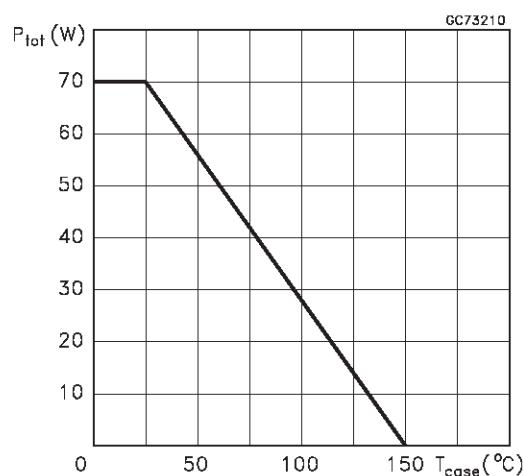
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = \text{Half Rated } V_{CEO}$			0.5	mA
I _{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = \text{Rated } V_{CBO}$			0.2	mA
I _{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5 \text{ V}$			5	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 30 \text{ mA}$ for TIP135 for TIP132/TIP137	60	100		V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	$I_C = 4 \text{ A}$ $I_B = 16 \text{ mA}$ $I_C = 6 \text{ A}$ $I_B = 30 \text{ mA}$			2 4	V
V _{BE*}	Base-Emitter Voltage	$I_C = 4 \text{ A}$ $V_{CE} = 4 \text{ V}$			2.5	V
h_{FE}^*	DC Current Gain	$I_C = 1 \text{ A}$ $V_{CE} = 4 \text{ V}$ $I_C = 4 \text{ A}$ $V_{CE} = 4 \text{ V}$	500	1000	15000	

* Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %
For PNP types voltage and current values are negative.

Safe Operating Areas

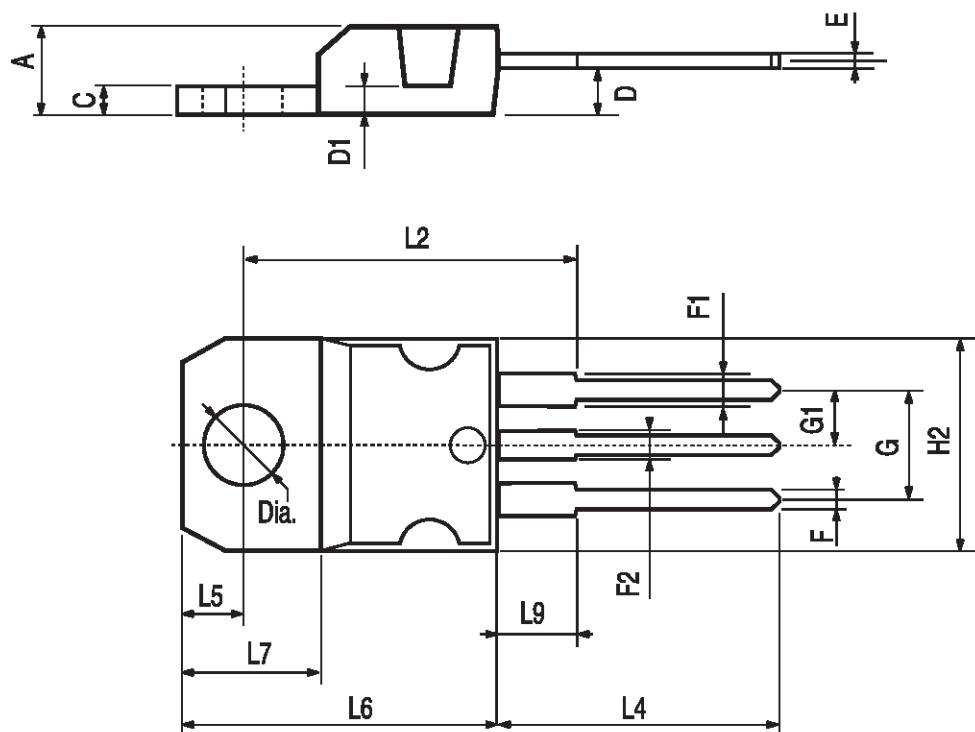


Power Derating Curve



TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



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